

REMARKS

During a telephone conversation, the Examiner, Jason Savage, advised Applicants that there were obvious informalities in the claims of the subject patent application. For example, claim 2 is dependent upon claim 19.

In the Restriction Requirement mailed February 15, 2002 in the parent application, the Examiner restricted the prosecution of the above-captioned application to one of the inventions grouped as: Group I. Claims 1 to 18, drawn to a method of altering the properties of a metal piece by laser peening, classified in class 219, subclass 121.85. and Group II. Claims 19 to 36, drawn to a metal piece with altered the properties, classified in class 148, subclass 400. Applicants elected the claims of group I, claims 1 to 18, drawn to a method of altering the properties of a metal piece by laser peening for examination in the parent application. The subject divisional application was filed covering Claims 19 to 36, drawn to a metal piece with altered the properties.

Applicants have reviewed the application and discovered that when the divisional application was filed the single independent claim 1 was correctly numbered; however, the dependent claims all use the original numbering and refer to claims 19, 24, 31, 32, 34, and 35. The claims have been amended to correct the dependent claim numbering.

The specification has been amended to show that "This application is a division of Application Serial No. 09/771,179 filed January 25, 2001 entitled "Laser Peening of Components of Thin Cross-Section," now United States Patent No. 6,657,160 issued December 2, 2003."

The claims have also been amended to distinguish the present invention from the prior art. In an Office Action mailed February 26, 2003 in the parent application, its claims were rejected over Clauer et al. (U.S. Patent No. 4,401,447)

in view of Lawrence et al. (U.S. Patent No. 6,333,488) and Lewis (U.S. Patent No. 5,394,875) and Montgomery et al. (U.S. Patent No. 6,320,989).

Applicants have amended the single independent claim, claim 1, in the subject application. Currently amended claim 1 now contains the elements that are not shown or suggested by the primary reference, Clauer et al.:

"A metal piece, having first side and a second side, produced by the method of:

laser peening all or a portion of the metal piece from the first side by directing at least one laser beam onto the metal piece from the first side creating a multiplicity of pressure pulses in the metal piece,

operatively connecting an acoustic coupling material to the second side of the metal piece coupling said multiplicity of pressure pulses out of the metal piece from the second side, and

maintaining said fluid acoustic coupling material operatively connected to the second side of the metal piece throughout said step of operatively connecting a fluid acoustic coupling material to the second side of the metal piece coupling said multiplicity of pressure pulses out of the metal piece from the second side,

wherein said fluid acoustic coupling material functions to couple said multiplicity of pressure pulses out of the metal piece into said fluid acoustic coupling material throughout said step of operatively connecting a fluid acoustic coupling material to the second side of the metal piece coupling said multiplicity of pressure pulses out of the metal piece from the second side."

The Clauer et al. reference states, "The momentum trap 21 is a cylindrical disk located directly behind the specimen 19. Mineral oil (not shown) may be used to couple the momentum trap 21 to the specimen 19," col. 2, lines 65-68, and "the momentum imparted to the trap by the reflected wave causes the spring loaded trap to break away and disconnect from the specimen after the stress

wave is reflected from the back surface of the momentum trap and strike the common surface of the specimen and the trap" col. 2, lines 31-36.

The secondary reference, Lawrence et al., states, "measuring a confinement media layer thickness on the correlation surface using an ultrasonic transducer attached to a side of the test piece opposite that of the correlation surface," col. 2, lines 16-19, and "the ultrasonic transducer 20 is attached to the convex suction side 148 of the airfoil 134 of the blade 108," col. 6, lines 17-19.

Applicants submit that the, Clauer et al. reference and the Lawrence reference and Lewis reference and the Montgomery et al. reference could not be combined to produce Applicants' claimed invention, and further, even if combined the combination would not produce Applicant's claimed invention. The Lawrence et al. reference shows an ultrasonic transducer 20 attached to a test piece and has nothing to do with a momentum trap 21 shown by the Clauer et al. reference. The combination of the references would not produce the invention defined by the currently amended claims now in the subject application.

SUMMARY

The undersigned respectfully submits that, in view of the foregoing amendments and the remarks, the present application is believed to be in condition for allowance. It is respectfully requested that this application be reconsidered, that the claims be allowed, and that this case be passed to issue. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to call the undersigned attorney at (925) 424-6897.

Respectfully submitted,



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